

WHAT IS CLAIMED IS:

1. A differential current driver having two output terminals, a first current source supplying a first current through two switches to the two output terminals, and a circuit for selectively closing the two switches according to data to be transmitted, comprising:
 - a comparison circuit for comparing the first current with a reference value and generating a first control signal having a value responsive to a difference between the first current and the reference value; and
 - a current adjustment circuit for adjusting the first current responsive to the first control signal.
2. The differential current driver of claim 1, wherein the current adjustment circuit comprises a transistor for shunting part of the first current to a node different from the two output terminals.
3. The differential current driver of claim 2, wherein the node different from the two output terminals is a ground node, and the transistor has a source terminal connected to the ground node, a gate terminal receiving the first control signal, and a drain terminal connected to a common node through which the first current passes from the first current source to the two switches.
4. The differential current driver of claim 1, wherein the first current source receives a bias voltage controlling the first current, and the current adjustment circuit comprises a transistor for adjusting the bias voltage.
5. The differential current driver of claim 4, wherein the transistor has a source terminal connected to a power supply

node, a gate terminal receiving the first control signal, and a drain terminal receiving the bias voltage.

6. The differential current driver of claim 1, wherein the first current source receives a bias voltage controlling the first current, and the comparison circuit comprises:

- a second current source for generating a second current responsive to the bias voltage, the second current mirroring the first current;

- a third current source for generating a reference current;

- a pair of loads for converting the second current to a second voltage and converting the reference current to a third voltage; and

- a differential amplifier for generating the first control signal from the second voltage and the third voltage.

7. The differential current driver of claim 6, wherein the second current is less than the first current.

8. The differential current driver of claim 1, wherein the differential current driver receives a first command signal indicating validity of the data to be output and a second command signal for enabling and disabling the two switches, further comprising a switching circuit for conducting the first current to a first node different from the two output terminals while the first command signal indicates that the data to be output are valid but the second command signal disables the two switches.

9. The differential current driver of claim 8, wherein the switching circuit comprises:

- a logic gate for performing a logic operation on the first command signal and the second command signal to

generate a second control signal; and
a switch controlled by the second control signal.

10. The differential current driver of claim 9, wherein the first node is a ground node and the switch controlled by the second control signal is a transistor having a source terminal connected to the first node, a gate terminal receiving the second control signal, and a drain terminal connected to a common node through which the first current passes from the first current source to the two switches.

11. The differential current driver of claim 8, wherein the current adjustment circuit comprises a transistor for shunting part of the first current to a second node different from the two output terminals.

12. The differential current driver of claim 11, wherein the second node is a ground node, and the transistor has a source terminal connected to the second node, a gate terminal receiving the first control signal, and a drain terminal connected to a common node through which the first current passes from the first current source to the two switches.

13. The differential current driver of claim 8, wherein the first current source receives a bias voltage controlling the first current, and the current adjustment circuit comprises a transistor for adjusting the bias voltage.

14. The differential current driver of claim 13, wherein the transistor has a source terminal connected to a power supply node, a gate terminal receiving the first control signal, and a drain terminal receiving the bias voltage.

15. The differential current driver of claim 8, wherein the first current source receives a bias voltage controlling the first current, and the comparison circuit comprises:

- a second current source for generating a second current responsive to the bias voltage, the second current mirroring the first current;

- a third current source for generating a reference current;

- a pair of loads for converting the second current to a second voltage and converting the reference current to a third voltage; and

- a differential amplifier for generating the first control signal from the second voltage and the third voltage.

16. The differential current driver of claim 15, wherein the second current is less than the first current.

17. A differential current driver receiving a data signal, a first command signal indicating validity of the data signal, and a second command signal enabling and disabling output of a first current from the differential current driver, the differential current driver comprising:

- a first current source for supplying said first current;

- a first output terminal;

- a second output terminal;

- a node different from the first output terminal and the second output terminal;

- a first switch for conducting the first current from the first current source to the first output terminal responsive to the data signal and the second command signal;

- a second switch for conducting the first current from the first current source to the second output terminal responsive to the data signal and the second command signal;

and

a third switch for conducting the first current from the first current source to said node while the first command signal indicates that the data signal is valid but the second command signal disables output of the first current.

18. The differential current driver of claim 17, wherein said node is a ground node.

19. The differential current driver of claim 17, further comprising:

a second current source for drawing a second current from the first output terminal and the second output terminal;

a fourth switch for conducting the second current from the first output terminal to the second current source responsive to the data signal and the second command signal; and

a fifth switch for conducting the second current from the second output terminal to the second current source responsive to the data signal and the second command signal;

wherein said node is a node at which the second current source receives the second current from the fourth switch and the fifth switch.

20. A method of using the differential current driver of claim 17 to transmit data, comprising:

receiving data from an external source;

receiving a signal from the external source indicating that the data are valid;

sending the first command signal to the differential current driver to indicate that the data signal is valid, without yet sending the data signal to the differential

current driver;

reformatting the data for transmission, thereby
generating the data signal;

sending the second command signal to the differential
current driver to enable output of the first current from
the differential current driver; and

sending the data signal to the differential current
driver together with the second command signal.